

What is claimed is:

1. A pulmonary vein implant comprising:

an implant framework;

said implant framework being expandable from a delivery state to an expanded state; said expanded state being a state wherein said framework substantially conforms to an internal surface of said pulmonary vein; and,

said implant framework being sized and shaped to have a residual expansion force in said expanded state such that said framework migrates into said internal surface of said pulmonary vein over a period of time.

2. A pulmonary vein implant according to claim 1, wherein said delivery state is sufficiently small so that said implant framework fits within a delivery device.

3. A pulmonary vein implant according to claim 1, wherein said residual expansion force of said implant framework in said expanded state is such that said framework migrates substantially completely through said internal surface of said pulmonary vein.

4. A pulmonary vein implant according to claim 1, wherein said residual expansion force of said implant framework in said expanded state is such that a scar is created in said internal surface of said pulmonary vein.

5. A pulmonary vein implant according to claim 1, wherein said implant framework is a pulmonary vein stent.

6. A pulmonary vein implant according to claim 1, wherein said implant framework includes a spatial anchoring section and a conduction block inducing section.

7. A pulmonary vein implant according to claim 1, wherein said implant framework includes retention surfaces disposed on said implant framework.

8. A pulmonary vein implant according to claim 7, wherein said retention surfaces are comprised of barbs.
9. A pulmonary vein implant according to claim 1, wherein said implant framework is an elongated strip when said implant framework is in said delivery state.
10. A method of treating an atrial arrhythmia comprising:
  - delivering an unexpanded implant to a target site in an ostial region of a pulmonary vein;
  - expanding said implant to an initial retention state wherein said implant substantially conforms to a wall in said ostial region of said pulmonary vein; and,
  - allowing said implant to continue to expand over time such that said implant migrates into said wall of said pulmonary vein, said migration causing a tissue response that treats said atrial arrhythmia.
11. A method according to claim 10, wherein said implant migrates through said wall of said pulmonary vein.
12. A method according to claim 10, wherein the causing of said tissue response includes causing the formation of scar tissue.
13. A method according to claim 10, wherein the delivering of an unexpanded implant includes delivering a compressed stent.
14. A method according to claim 10, wherein the expanding of said implant includes expanding a spatial anchoring section of said implant.
15. A method according to claim 14, wherein the allowing of said implant to continue to expand includes allowing a conduction block inducing section of said implant to expand into said wall.

16. A method according to claim 10, wherein the expanding of said implant includes engaging retention surfaces in said wall of said pulmonary vein.
17. A method according to claim 16, wherein the engaging of said retention surfaces includes engaging barbs on said implant in said wall of said pulmonary vein.
18. A method according to claim 9, wherein the delivering of an unexpanded implant includes delivering an elongated implantable strip to said target site.
19. A pulmonary vein implant comprising:
- an implant framework;
  - said framework including a spatial anchoring section and a conduction block inducing section; and,
  - said spatial anchoring section and said conduction block inducing section being substantially separate and distinct from each other along an axial length of said framework.
20. A pulmonary vein implant according to claim 19, wherein said conduction block inducing section is an expandable ring sized and shaped to reside in an ostial region of said pulmonary vein.
21. A pulmonary vein implant according to claim 20, wherein said spatial anchoring section comprises an expandable anchoring ring, a substantial portion of which being located downstream of said conduction block inducing section.
22. A pulmonary vein implant according to claim 21, wherein said expandable anchoring ring is sized and shaped to engage an internal diameter of a pulmonary vein downstream of a bifurcation of said pulmonary vein.
23. A pulmonary vein implant according to claim 21, wherein said expandable anchoring ring has a greater surface area than a surface area of said conduction block inducing section.

24. A pulmonary vein implant according to claim 21, wherein said expandable anchoring ring has a substantially greater axial length than said conduction block inducing section.
25. A pulmonary vein implant according to claim 21, wherein said expandable anchoring ring is fixed to said conduction block inducing section at a proximal end of said expandable anchoring ring.
26. A pulmonary vein implant according to claim 25, wherein said expandable anchoring ring comprises a plurality of struts that extend proximally beyond said conduction block inducing section along said axial length of said framework.
27. A pulmonary vein implant according to claim 23, wherein said surface area of said expandable anchoring ring is sufficient to substantially prevent migration of said expandable anchoring ring into a wall of said pulmonary vein.
28. A pulmonary vein implant according to claim 27, wherein said surface area of said conduction block inducing section is sufficiently small to ensure said conduction block inducing section migrates into said wall of said pulmonary vein.
29. A pulmonary vein implant according to claim 21, wherein said expandable anchoring ring includes a plurality of barbs for penetrating a wall of said pulmonary vein.
30. A pulmonary vein implant according to claim 21, wherein implant framework is an assemblage of said expandable anchoring ring and said conduction block inducing section.
31. A pulmonary vein implant according to claim 20, wherein said spatial anchoring section is a clip located distal of said expandable ring and wherein said clip is sized and shaped to engage a bifurcation of said pulmonary vein.
32. A pulmonary vein implant according to claim 31, wherein said implant framework includes a clip loop spanning across a diameter of said expandable ring and wherein said clip is disposed on said clip arc.

33. A pulmonary vein implant according to claim 32, wherein said clip loop includes an elastic portion sized and shaped to assist in the positioning of said expandable ring relative to said bifurcation of said pulmonary vein.

34. A pulmonary vein implant comprising:

an elongated strip movable between a relaxed shape substantially conformable with an ostial region in said pulmonary vein and a stressed shape that is substantially linear; and,

said elongated strip having a plurality of retention sections disposed along said elongated strip.

35. A pulmonary vein implant according to claim 34, wherein said retention sections are comprised of barbs that extend radially when said strip is in said relaxed shape.

36. A pulmonary vein implant according to claim 34, wherein said elongated strip further includes wire receiving openings, and wherein said wire receiving openings are sized to receive a wire suitable for changing said relaxed shape of said strip.

37. A method of creating an electrical conduction block in a pulmonary vein ostial region comprising:

directing an implant towards said ostial region in said pulmonary vein;

retaining said implant in said pulmonary vein with a first component of said implant;

initiating the formation of scar tissue in said ostial region of said pulmonary vein with a second component of said implant; and,

allowing said implant to remain at said pulmonary vein.

38. A method according to claim 37, wherein the initiating of said scar formation includes causing said second component to migrate into ostial region tissue.

39. A method according to claim 37, wherein the retaining of said implant includes expanding said first component to a size that causes an expansion force on the internal walls of said pulmonary vein.
40. A method according to claim 37, wherein the initiating of the formation of scar tissue includes causing said second component of said implant to migrate into said ostial region at a faster rate than said first component of said implant.
41. A method according to claim 37, wherein the retaining of said implant includes abutting the implant against a bifurcation of said pulmonary vein.
42. A delivery mechanism for an electrical conduction block device comprising:
- a catheter having an inner shaft and a movable sheath; said movable sheath surrounding said inner shaft;
  - a plurality of expandable arms disposed at a distal end of said inner shaft;
  - a distal end of each expandable arm having a retention mechanism engageable with one end of said electrical conduction block device; and,
  - said plurality of expandable arms being selectively expanded or contracted according to movement of said movable sheath.
43. A delivery mechanism according to claim 42, wherein said retention mechanism comprises a wire that connects said distal end of each expandable arm to a portion of said electrical conduction block device.
44. A delivery mechanism according to claim 43, wherein said retention mechanism comprises a strip of material that fits within a groove of a portion of said electrical conduction block device.
45. A delivery mechanism according to claim 44, wherein said retention mechanism further comprises a wire for securing said strip of material in said groove.

46. A delivery mechanism according to claim 42, wherein said retention mechanism comprises a cradle that receives a portion of said electrical conduction block device wherein a wire secures said portion of said electrical conduction block device in said cradle.

47. A delivery mechanism according to claim 42, wherein said retention mechanism includes a plurality of wires that are insertable into a hole of a portion of said electrical conduction block, wherein at least one of said wires has a portion with a larger diameter than the other of said plurality of wires.

48. A delivery mechanism for an expandable electrical conduction block device comprising:

a catheter having an inner shaft and a movable sheath; said movable sheath surrounding said inner shaft;

a ring of pins disposed at a distal end of said inner shaft;

each of said pins being engageable with a mating portion of one end of said electrical conduction block device;

said pins and said mating portion of one end of said electrical conduction block being prevented from disengagement so long as said movable sheath covers said ring of pins; and,

said movable sheath being movable over said ring of pins in one of a forward and reverse direction depending on a deployment decision by a user.